

WHAT IS CLAIMED IS:

1. A scanning microscope having a detector, arranged in a detection beam path, for receiving detection light proceeding from a sample and an optical shutter means between the sample and the detector with which the detection beam path can be blocked.
2. The scanning microscope as defined in Claim 1, wherein the detector is a non-descan detector.
3. The scanning microscope as defined in Claim 1, wherein the detector is a descan detector.
4. The scanning microscope as defined in Claim 1, further comprising a control means for controlling the shutter means.
5. The scanning microscope as defined in Claim 1, wherein the detection beam path can be automatically opened up before the beginning of a scanning operation, and blocked at the end of the scanning operation.
6. The scanning microscope as defined in Claim 1, wherein the detection beam path is automatically blockable when the light power level of the detection light exceeds a definable threshold.
7. The scanning microscope as defined in Claim 6, further comprising a monitoring means that measures the light power level of the detection light.
8. The scanning microscope as defined in Claim 4, wherein the control means extrapolates the future change over time in the detection light power level, and wherein the detection beam path is automatically blockable when the

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light power level of the detection light is expected to exceed a definable threshold.

9. The scanning microscope as defined in Claim 1, wherein the shutter means contains a mechanical shutter or an electrooptical element or acoustooptical element or LCD element.
10. The scanning microscope as defined in Claim 1, wherein the detector contains a photodiode, in particular an avalanche photodiode, or a CCD element, in particular an EMCCD element, or a photomultiplier or photomultiplier array.
11. The scanning microscope as defined in Claim 1, wherein the scanning microscope is a confocal scanning microscope.